Statement of
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Office of Civilian Radioactive Waste Management
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Mr. Chairman and members of the Committee, I am Margaret Chu, Director of the Department of Energy's (DOE) Office of Civilian Radioactive Waste Management (OCRWM). I appreciate the opportunity to present our Fiscal Year (FY) 2005 budget request and discuss our plans to license, build, and operate a geologic repository at Yucca Mountain in Nevada, and our efforts to develop the transportation system needed to deliver spent nuclear fuel and high-level radioactive waste to the repository.

OCRWM implements our Nation's radioactive waste management policy, as established by the Nuclear Waste Policy Act of 1982, as amended. This policy requires safe, permanent geologic disposal of spent nuclear fuel and high-level radioactive waste resulting from the Nation's atomic energy defense activities. The disposal of this material in a geologic repository is required to maintain our energy options and national security, to allow the cleanup of former weapons production sites, to continue operation of our nuclear-powered vessels, and to advance our international nonproliferation goals. The Department's consolidation of spent nuclear fuel and high-level waste from 127 sites at a single secure, remote location is vital to our national interest. The Federal government is contractually required to implement a permanent solution for management of commercial spent nuclear fuel, in return for which utilities and ratepayers have paid fees to cover the costs of disposal.

The 2010 Objective

The Program's key objective remains to begin receiving waste at the Nuclear Regulatory Commission (NRC) -licensed Yucca Mountain repository in 2010. To achieve that objective, the Program must, in less than seven years, seek and secure authorization to construct the repository from the NRC, begin constructing the repository, and receive a license amendment allowing receipt of waste and operation of the repository. We must also develop a transportation system to transport waste from civilian and defense storage sites to the repository. That is a tight schedule, and the consequences of delay are significant.

For every year of delay beyond 2010, the cost of storing and handling Departmental defense waste alone is estimated to increase by $500 million. Regarding the nuclear utilities, the government's liability for damages for not beginning to take commercial spent fuel in 1998 already has been established by court decisions. While an accurate calculation of damages must await determinations by the courts, it is reasonable to assume that the amount of damages will be substantial and will increase with each year of delay.

Meeting the 2010 objective will require much greater resources than the Program has thus far received. We estimate, for example, that from 2005 to 2010 it will cost about $8 billion – more than 80 percent of the budget required to meet the 2010 objective – to construct the repository and develop the transportation system. That would average more than $1 billion a year, which is much higher than our previous annual appropriations.

The FY 2005 Budget Request

FY 2005 is a critical year in which important activities must converge if we are to meet the 2010 objective. In FY 2005, we will be fully engaged in the licensing process. At the same time, we must initiate certain activities in the near term to permit timely construction and ensure readiness for operations. These activities, in the areas of repository readiness and detailed design, transportation system development, and waste acceptance readiness – along with licensing activities – lead to our total budget request for FY 2005 of $880 million. While this is a significant increase over historical funding levels, it is an increase that has been carefully planned and understood for many years. We are confident that we are positioned to commit funds responsibly and effectively to defend the license application; to accelerate repository surface, subsurface, and waste package design work needed for construction authorization; and to conduct conceptual and preliminary design activities for Nevada transportation. Moreover, a major portion of the increase represents procurements, including transportation cask acquisition and important repository site safety infrastructure upgrades.

To set the stage for our FY 2005 budget request, I would like to briefly describe OCRWM's FY 2003 accomplishments, our ongoing activities based on our FY 2004 appropriation, and our goals for FY 2005.

FY 2003 Accomplishments

Having achieved Congressional and Presidential approval of the Yucca Mountain site in 2002, we successfully transitioned from a scientific study program to one focused on the regulatory requirements for obtaining a license from the NRC. We targeted five areas critical to licensing success in a broad Management Improvement Initiative: roles, responsibilities, authority and accountability; Quality Assurance; procedural compliance; the Corrective Action Program; and Safety Conscious Work Environment. We implemented a Program-wide functional realignment to create an organization focused on licensing, and we strengthened our Federal management team by bringing on board several senior managers with extensive experience in managing major Federal projects. These actions have positioned us to be a successful NRC licensee and to meet requirements for operating a repository safely, and will continue into FY 2005.

FY 2003 brought significant challenges to our Program. The limited funding provided during the continuing resolution and the final FY 2003 appropriation of $457 million, which was $134 million below our request, required us to institute contingency plans,

reduce near-term work scope, and further delay transportation activities that are directly tied to our ability to meet the 2010 objective. Rather than stretch our resources and risk the safety of our workers, we elected to partially close the Yucca Mountain site and to defer some work there. The focus of our efforts under these constraints was to maintain our goal of submitting a high-quality license application to the NRC in December 2004.

The Program prepared a conceptual design and a detailed plan for repository licensing, construction, and operation, and focused on completing the license application to the NRC for authority to construct the repository. By the end of FY 2003, the Yucca Mountain Project had accomplished the following:

- Completed the conceptual design of the repository surface and underground facilities and waste package elements sufficient for development of the preliminary design for the license application.

- Completed materials testing and analyses required to support the license application design for the waste package and surface and subsurface facilities.

- Completed testing data input for the Total System Performance Assessment Post-closure Report, to be included in the license application.

- Initiated the development of the license application document.

- Identified Project records and technical documents that will be included in the licensing support network.

In addition, during FY 2003, the OCRWM National Transportation Project drafted the *Strategic Plan for the Safe Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste to Yucca Mountain*, which was issued in November 2003.

Throughout the Program, we implemented management improvements identified in the President's Management Agenda. In FY 2003, DOE was ranked number one among all Federal agencies in implementation of the President's Management Agenda.

During FY 2003, the Program launched its new and more rigorous Corrective Action Program (CAP) software system. The new CAP combined condition, nonconformance, and technical error reports, and the condition/issue identification and reporting/resolution system into a single entry point process.

FY 2004 Ongoing Activities

Yucca Mountain Project

Consistent with Departmental and Program objectives, the Yucca Mountain Project's main focus in FY 2004 is on completing the license application. The required elements of preliminary design, performance assessment, safety analyses, and technical data in the license application must be sufficient for the NRC to conduct an independent review and reach a decision to issue a construction authorization. The application must demonstrate that the repository can be constructed and operated with reasonable expectation that the health and safety of the public will be protected.

By the end of FY 2004, with the funds appropriated, we will:

- Address all "key technical issue" agreements that the Department and NRC agree the Program needs to address prior to license application submittal.

- Complete required elements of the preliminary design for the waste package, surface facilities, and subsurface facilities in support of the license application.

- Complete the safety analyses for Department-owned spent nuclear fuel and high-level radioactive waste, and Naval spent fuel for the license application.

- Complete the total system performance assessment postclosure report in support of the license application. This report will reflect increased understanding of how emplaced nuclear waste will interact with the natural and engineered barriers after the repository is closed.

- Prepare tens of millions of pages of relevant documentation for inclusion in the electronic Licensing Support Network (LSN) and completed certification consistent with the requirements of 10 CFR Part 2, Subpart J.

- Complete a draft of the license application.

Even though site characterization is complete, in FY 2004 we are continuing to collect valuable scientific information for the Performance Confirmation baseline. The NRC requires Performance Confirmation to continue until the repository is permanently closed.

National and Nevada Transportation Projects

As noted previously, we issued the *Strategic Plan for the Safe Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste to Yucca Mountain* in November, which described the Department's process for working cooperatively with states, tribes, and other interested parties as the transportation system is developed. In early FY 2004, the

transportation program focused on selecting the transportation mode and corridor that would establish the transportation system's infrastructure requirements. In December 2003, we announced a preferred corridor for development of a branch rail line in Nevada to connect from an existing rail line to the Yucca Mountain site. The program is now defining infrastructure development projects to provide the capability for transporting spent nuclear fuel and high-level waste to the repository. Funding in FY 2004 represents initial investments in major transportation infrastructure needs, including transportation casks, rolling stock, the transportation system in Nevada, a fleet maintenance facility, and the business systems needed to manage multiple procurements and construction projects.

Program Management and Integration

A key component of the Program Management and Integration budget element is Quality Assurance (QA). In the last year, we have made significant progress in the implementation of our QA program requirements. We have had several independent assessments that have determined that the QA program is being effectively implemented. We have also completed the actions and closed several of the significant QA issues that have been open for extended periods of time. Finally, we are preparing a major revision to our QA program document in support of the license application.

During this fiscal year, we have taken several steps to ensure we are prepared to manage major capital projects efficiently and cost-effectively. We submitted a detailed Capital Asset Management Plan for the Program to the Office of Management and Budget in November 2003, and are now working to complete a comprehensive program acquisition strategy that will be incorporated in the next update of the Plan next fall. We have strengthened our performance measurement and project management capabilities and systems, and are using them to monitor and manage all the activities that support license application completion.

FY 2005 Key Activities

Yucca Mountain Project

The amount requested for the repository project in FY 2005 is $558.9 million, an increase of $155 million over our FY 2004 enacted level. The primary drivers for this increase are repository facility design, prototype development and testing, procurement in preparation for underground excavation, design of offsite utilities and infrastructure, and support for responding to technical questions on the license application.

Our initial focus will be on submitting the license application by December 2004. The license application, expected to be approximately 10,000 pages, will include a description of site characteristics; waste package, repository surface and subsurface designs; the basis for development of operations and maintenance plans for surface and subsurface facilities; safety analysis results for the period prior to permanent closure; total system performance assessment results for the post-closure period; and a discussion of how the

proposed waste package and repository will comply with applicable regulatory requirements. It also will address safeguards, physical security plans, the quality assurance program, and performance confirmation. We are closely managing the schedule for the remaining work. Quality and completeness are paramount: the application we submit will meet the NRC's regulatory requirements and be docketable by the NRC.

After the license application is delivered, we must be prepared to respond to queries and requests that NRC will make during its technical review. We expect NRC's review to be thorough and rigorous, and our objective is to provide all required information in a timely and effective manner to support completion of the NRC's review within the statutorily established time period.

In parallel with the licensing process, we must focus on design of the repository and ensure that the site is ready to support construction as soon as it is authorized by the NRC.

By the end of FY 2005, we will have:

- Completed and submitted a license application for repository construction authorization to the NRC.

- Updated the LSN certification concurrent with license application submittal.
- Completed the preliminary design for the waste package, surface facilities, and subsurface facilities, which requires continuing performance assessment analysis.

- Continued to refine the safety analysis as needed, in response to NRC review and in accordance with NRC licensing regulations.

- Completed the detailed work plan, cost estimate, and schedule, and established a performance measurement baseline for the final repository design and construction.

- Initiated procurement activities for construction of the surface and underground facilities.

- Developed designs for offsite facilities and utilities needed to support the start of constuction.

- Addressed safety-related needs at the site.

We are requesting funding for payments-equal-to-taxes to the State of Nevada and to Nye County, Nevada; Yucca Mountain is located in Nye County. Our FY 2005 request also includes funding for Affected Units of Local Government, as well as funding to the

University System of Nevada and to Nye County and Inyo County, California for independent scientific studies.

National and Nevada Transportation Projects

The amount requested in FY 2005 for National and Nevada Transportation activities increases from the FY 2004 enacted level of $63.5 million to $186 million, $163 million of which will be for the National Transportation Project. The significant increase in funding will support the initial procurement of transportation casks and auxiliary equipment and will accelerate operational capability.

The initial procurement of truck and rail casks is needed to provide the capability for waste acceptance in 2010, given the lead time required for solicitation, evaluation of proposals, NRC package certification (for new designs), and fabrication of transportation casks. We are working with the cask vendor industry to procure an efficient cask fleet that maximizes the government's ability to support the full range of contents that need to be shipped with the minimum number of separate designs. These procurements will proceed towards cask fabrication in a step-wise manner to maintain flexibility on final procurements as long as possible. We will also continue to address a new railcar standard implemented by the American Association of Railroads for shipments of spent nuclear fuel and high-level waste. In addition, we have requested funds for equipment procurement and infrastructure preparation needed for full-scale cask testing by the NRC to enhance public confidence in the NRC's cask certification process.

The National Transportation Project will support expanded institutional interactions with regard to establishing preliminary transportation routes, operating protocols, and safeguards and security activities. We will also continue support of state regional groups to facilitate development of the policy for funding state and tribal emergency response training and technical assistance as required by Section 180(c) of the NWPA. We will continue and expand our ongoing dialogue with state and tribal officials and other stakeholders who will play an integral role in our transportation planning.

We have requested $23 million for Nevada transportation work, including completion of conceptual design and the beginning of preliminary design activities, issuance of the draft Environmental Impact Statement for the rail alignment, associated public hearings, and continued development of the land acquisition case file required by the Bureau of Land Management. Some of this is contingent upon the Department issuing a Record of Decision under the National Environmental Policy Act selecting a mode of transportation in Nevada and a rail alignment, as appropriate. We expect to issue the decision shortly.

Program Management and Integration

Our FY 2005 request includes $47.5 million for program management and integration activities, an increase of $17.8 million over the FY 2004 enacted level. The request reflects the need to have the strongest possible nuclear Quality Assurance program as we

move into the licensing phase. Quality Assurance is the cornerstone of assuring the NRC that the Program has implemented activities related to radiological safety and health and waste isolation that are required by NRC regulations. We will complete the institutionalization of improvements that were introduced through the Management Improvement Initiative to meet the NRC's expectations of its licensees.

The FY 2005 request also contains funding for system engineering and analysis activities to enable us to better evaluate and optimize the Program's component elements as they begin to converge into a single waste management system. In addition to the repository and transportation readiness, the third key piece that must be put in place is waste acceptance readiness – i.e., establishing the "pipeline" of wastes destined for Yucca Mountain. (In prior years, waste acceptance was part of the Transportation budget request, but is now included in Program Management and Integration.) By addressing waste acceptance issues now, we can ensure that repository facilities and transportation infrastructure will be compatible with the commercial spent nuclear fuel and DOE-managed wastes that are planned for receipt in 2010 and beyond. OCRWM will work closely with the Office of Environmental Management on DOE spent nuclear fuel and high-level waste acceptance criteria to ensure that we have an integrated, timely, and cost-effective approach.

Program Direction

The Program Direction budget request of $87.5 million supports Federal salaries, expenses associated with building maintenance and rent, training, and management and technical support services, which include independent Nuclear Waste Fund audit services and independent technical and cost analyses. These resources fund a small increase in support services related to Quality Assurance, and national transportation technical support activities. The request also reflects a small increase in Federal staff expenses to manage additional repository design/licensing activities and National and Nevada transportation work.

Assumption of DOE Spent Nuclear Fuel Management Functions

OCRWM will be the organization ultimately responsible for disposing of spent nuclear fuel owned by the Department. Therefore, our FY 2005 budget reflects OCRWM's assumption of responsibilities for the National Spent Nuclear Fuel Program, management within the U.S. of returned foreign research reactor spent nuclear fuel, domestic research reactor spent fuel management, and the management of Chemical Processing Plant–666 from the Office of Environmental Management. To fund these programs, we expect the Office of Environmental Management to transfer $22.3 million from its FY 2005 appropriation, funded from the Other Defense Activities account. Similarly, the Department's plans call for the Office of Environmental Management to transfer to OCRWM $5.2 million from the Energy Supply Research and Development account to support spent fuel management work at the Fort St. Vrain, Colorado, Independent Spent Fuel Storage Installation, and the Three Mile Island–2 Independent Spent Fuel Storage

Installation at the Idaho Nuclear Technology Engineering Center, which will be transferred from the Office of Environmental Management, as well as domestic and university research reactor spent fuel management functions transferred from the Office of Nuclear Energy, Science and Technology.

An Office of DOE Spent Fuel Management, reporting to the OCRWM Director, will be established to integrate and manage DOE spent nuclear fuel activities without interfering with the ongoing mission we perform under the Nuclear Waste Policy Act. The transfer of these functions will enable OCRWM to consolidate DOE spent nuclear fuel expertise and oversight effectively and efficiently.

Ensuring Adequate Resources to Complete the Mission

The Department of Energy and the Congress have been aware for many years that funding requirements for the repository program would increase substantially as we approach construction and transportation system development. In FY 2005 and beyond, the Program will need significantly increased funding to pay for the design, construction, and operation of the repository, and for acquisition and development of the transportation infrastructure. Much greater certainty of funding is needed for such a massive capital project to ensure proper and cost-effective planning and acquisition of capital assets. Delays simply increase costs, without fulfilling the federal responsibility for safe, secure disposal of the waste.

In accordance with the funding approach established in the Nuclear Waste Policy Act, the Department collects annual fees from nuclear utilities for the disposal of their spent nuclear fuel. The fees are reflected in the utility bills that their customers receive. In FY 2005, an estimated $749 million will be collected. The resources will be there and we should not delay in making them available for their intended purpose.

The proposed appropriations language in the President's Budget is contingent upon enactment of legislation reclassifying the annual receipts that are deposited into the Nuclear Waste Fund as discretionary and crediting them as offsetting collections to annual appropriations. On February 27, 2004, Secretary Abraham sent proposed legislation to Congress that would accomplish this reclassification. By allowing the mandatory collections to be credited as discretionary, the net discretionary appropriation would be $0. The proposed legislation would be effective until repository construction is complete, estimated to be 2010. Under this proposal, the Program would continue to be subject to the annual appropriations process and Congressional oversight. This proposal would simply allow the Appropriations Committees to provide funding sufficient for the Program's needs without interfering with other DOE programs.

Cost Reduction Initiatives

While access to the funds paid by ratepayers for nuclear waste disposal is nonetheless critical, we believe we can improve the funding outlook by reducing the total system life

cycle cost of the repository system. With this goal in mind, we are looking at enhancements that can be achieved through phased development, technical alternatives, and acceleration of operations post-2010.

Under a phased development approach to repository construction, we have divided the surface and underground facilities into several phases so that the repository can be constructed and operated in stages. The license application will address all facilities necessary to emplace 70,000 metric tons of spent nuclear fuel and high-level radioactive waste, and will describe the incremental process for building those surface and underground facilities in modules and panels. In addition to controlling short-term cost spikes, this strategy will increase confidence in our ability to begin operations in 2010, allow experience from initial operations to guide later activities, and retain flexibility for future technology improvements to be incorporated.

Present-day technology and technical information are adequate to support a robust license application, the transportation of waste to the site, and repository operations. However, within the decades-long time span during which the Yucca Mountain repository would be operated, advances in technology can lead to life-cycle cost savings, schedule efficiencies, and improved understanding of the safety and security of the repository system. To date, we have identified potential cost savings opportunities totaling several billion dollars over the long lifetime of repository operations in areas such as welding, advanced materials, techniques for excavating the underground tunnels, and low-maintenance ground support. Activities to reduce life-cycle costs and allow for enhancements in the waste management system are integrated throughout the Program, and as such will be funded from all budget areas.

Finally, OCRWM is developing plans for accelerating operations after 2010 to achieve steady-state waste receipt rates without diminishing safety or quality. As we gain experience, faster handling and underground emplacement will become possible, and as additional phased construction modules are completed, operational capacity will increase. In addition to lowering costs, accelerated waste receipt would enhance security by isolating spent nuclear fuel and high-level waste faster, and could have the added effect of allowing waste storage sites to be decommissioned sooner than currently planned.

Concluding Remarks

We are committed to the goal of beginning to receive and transport spent nuclear fuel and high-level waste to an NRC-licensed repository in 2010. Toward that end, we intend to submit a high-quality license application to the NRC in December of this year.

We are requesting a major increase in funding in FY 2005, but a necessary one both to achieve the Program's goals and to begin to meet the federal government's responsibility for safe, secure disposal of spent nuclear fuel and high-level radioactive waste. After more than 20 years of scientific study; a site approval process involving the Department, the State of Nevada, Congress, and the President; and purposeful efforts toward securing

a license, we have reached the point where investments must be made in transportation, repository, and waste acceptance readiness, if we are to maintain the objective of commencing operations in 2010. We urge your support for our budget request, and we are pleased to be able to work with you on this important national issue.